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Photo © Jérôme Bourjea

# Anatomical and diagnostic features of sea-turtles

*IOTC ROS SFO TR10.1*

Category: Identification of sea turtles, seabirds and cetaceans

*[IOTC ROS SFO TR10]*



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This module aims to familiarize Observers with the main diagnostic features used in the identification of sea turtles.



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## BIOLOGY, ECOLOGY AND BEHAVIOUR OF MARINE TURTLES



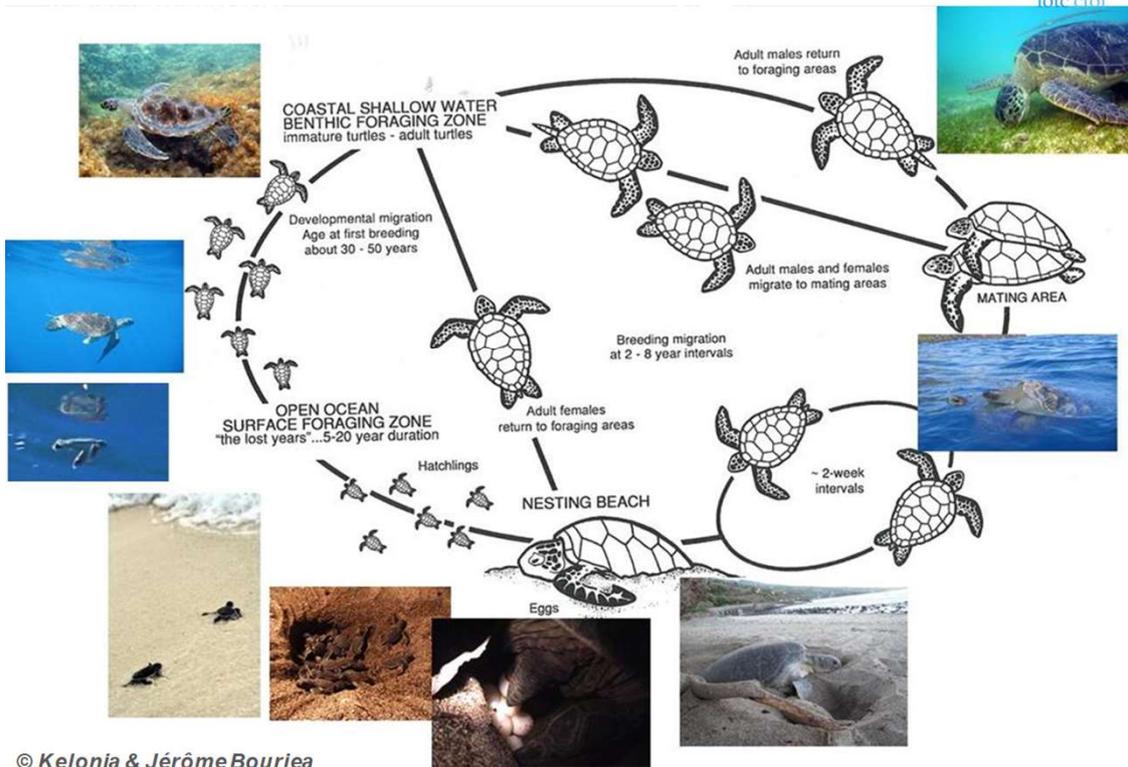
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1. Reptiles
2. Found in all oceans except polar regions
3. Lifetime: up to 80 years and longer
4. Breathe air
5. Total of 7 surviving species in world
6. 5 species found in the India Ocean region

1. Sea turtles are reptiles, which means they:
  - are cold blooded
  - lay eggs and
  - oxygen breathing
2. They are found even in cold waters, but are mostly observed in warm tropical waters (throughout the IOTC jurisdiction)
3. Sea turtles are long lived and can possibly live to well over 80 years
4. Because they breathe air, they need to surface regularly. This makes them susceptible to drowning when hooked or entangled in fishing gear.
5. There are 7 living species of sea turtles, five (5) of which occur in the Indian Ocean – The most common species are Olive-Ridley turtles, loggerhead turtles, hawksbill turtles and the very large leatherback turtle.

# MARINE TURTLES LIFE CYCLE



© Kelonia & Jérôme Bouriea

The life cycle and behaviour of sea turtles exposes them to interactions with commercial and artisanal fishing operations on both land and sea, and in inshore and offshore fisheries.



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## IOTC Requirements on Marine Turtles

- Observers should record all interactions with marine turtles, noting the species involved, the date and location and report to the flag state authority.
- Observers should take all the necessary steps to release the turtle alive and in good condition where possible.
- On longliner, observers should ensure that a line-cutter and a de-hooker are available onboard.
- Purse-seine vessels shall avoid encirclement of marine turtles and are encouraged to adopt FAD designs which reduce entanglement of marine turtles.



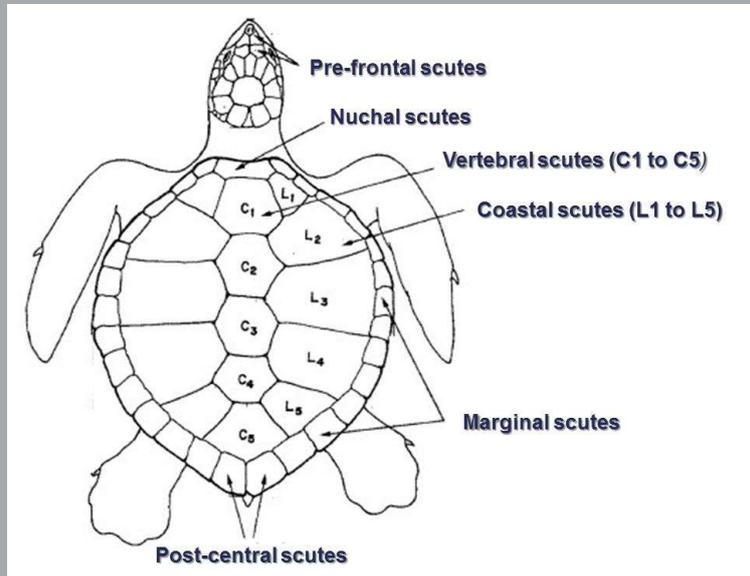
Take note; the responsibility of handling and releasing sea-turtles lies with the vessel and crew. However, the reality is that many crew will not be trained to release the animals in the best possible condition. It will, therefore, be your awareness, experience and training to advise on the handling and releasing these species in the best possible condition.

IOTC Requirements for observers on Turtles are:

- observers should record all interactions with marine turtles, noting the species involved, the date and location and report to the flag state authority;
- observers should take all the necessary steps to ensure that turtles are released alive and in good condition where possible;
- on a longliner, observers should ensure and record that a line-cutter and a de-hookers are available onboard;
- in terms of the resolutions, purse-seine vessels shall avoid encirclement of marine turtles and are encouraged to adopt FAD designs which; and reduce entanglement of marine turtles.



## TECHNICAL TERMS USED

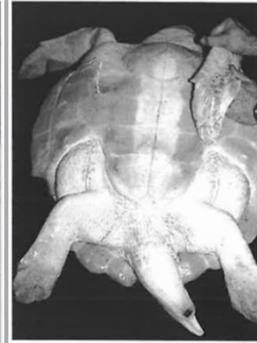


It can be difficult to separate and identify some species of turtle when viewed in the water or from a distance, unless some of the diagnostic features can be identified. This is often the case when a turtle is brought onboard, providing the opportunity to also take pictures for more positive identification.

To be able to recognise diagnostic features a knowledge of the various technical terms associated with the anatomical features of turtles are essential in the identification process.



## GENDER IDENTIFICATION



### Females

- Small tail
- Cloak located at the end of the tail and the plastron.

### Male Adults

- Long tail
- Cloak located near the tip of the tail
- Powerful claws on the second finger

To distinguish between females and immature males is not always easy and requires more detailed inspection of the animal. Some of the basic anatomical features to note are:

- Females have
  - Small tails
  - Cloaca located at the end of the tail and the plastron.
  
- Male Adults have
  - Long tails
  - Cloaca located near the tip of the tail
  - Powerful claws on the second finger of flippers

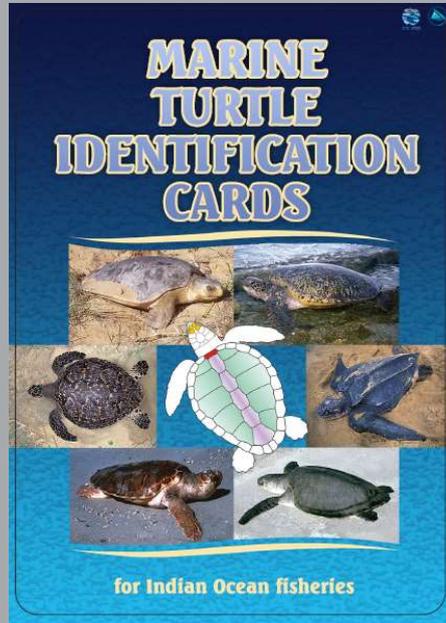


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## IOTC Marine Turtle Identification Cards

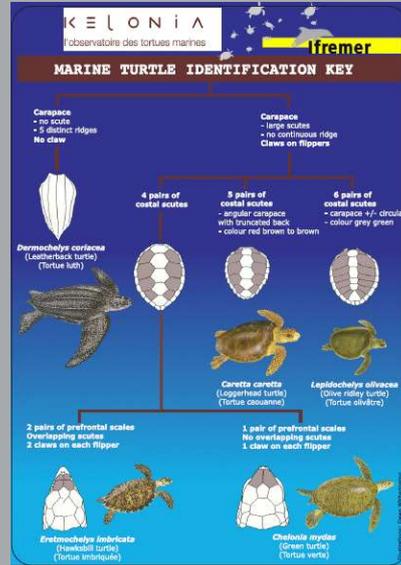


Download the IOTC Marine Turtle Identification Cards if you have not already received the digital or hard-copy versions.



## Anatomical Features Used for Marine Turtles Spp ID

1. Presence of scutes
2. Number of coastal scutes
3. Number of pre-frontal scutes
4. Number of claws per flipper



Marine turtles have their own nomenclature to describe features that go hand in hand with a knowledge of anatomical features these include:

- presence of scutes;
- number of coastal scutes;
- number of pre-frontal scutes; and
- number of claws per flipper.

*These will be expanded on in TR10*



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### LEATHERBACK TURTLE

- No scales (carapace covered by a leathery skin)
- 7 longitudinal ridges
- No claws
- Carapace Size: 120-210 cm
- Weight: 400-900 kg
- Status: Critically Endangered

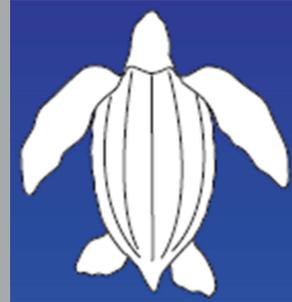


Photo: Blair Witherington



Photo: Vincent Liardet



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- Leatherback turtles are the largest living reptiles on the planet and can weigh up to nearly one (1) ton (1000 kg).
- The species is easily identified at the surface by the ridges running the length of the carapace.
- Leatherback turtles often survive entanglement with fishing gear, due to their size and strength, but it will not be possible to bring them onboard for disentanglement. This means great care should be taken for both the animal and crew's safety during handling.
- Refer to the IOTC Marine Turtle Identification Cards for further detail



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### LOGGERHEAD TURTLE

- 5 pairs of costal scales
- 2 prefrontal pairs
- 2 claws per fin
- Carapace: 70-110 cm
- Weight: 80 - 150 kg
- Status: Endangered

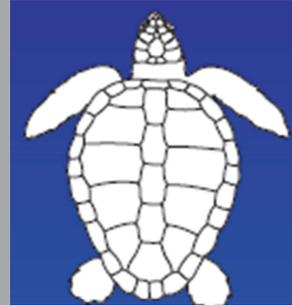


Photo: World Wildlife Fund



Photo: KELONIA



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- Loggerhead turtles generally have a very thick neck and usually appear fairly red in colour at the surface.
- They can also be quite large and difficult to bring onboard to detangle.
- Refer to the IOTC Marine Turtle Identification Cards for further detail



### GREEN TURTLE

- 4 pairs of costal scales
- 1 pair of pre-frontal scales
- 1 claw per fin
- Carapace 80 -120 cm
- Weight: 120-250 kg
- Status: Endangered

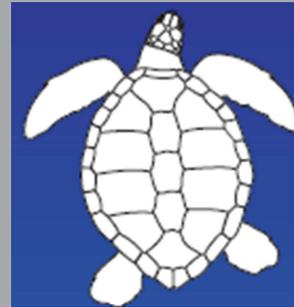
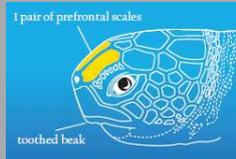


Photo: Vincent Liardet

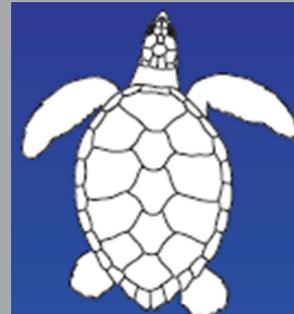
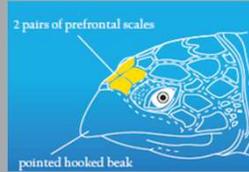


- Green turtles often have lots of plant and algae growth making them hard to separate from other species only based on their carapace patterns.
- Refer to the IOTC Marine Turtle Identification Cards for further detail



### HAWKSBILL TURTLE

- 4 pairs of costal scales
- 2 pairs of pre-frontals scales
- 2 claws per fin
- Carapace: 55- 95 cm
- Weight: 60-120 kg
- Status: Critically Endangered



- Note the unique slightly hooked bill and sharply edged carapace of the hawkbill turtle.
- Refer to the IOTC Marine Turtle Identification Cards for further detail



### OLIVE RIDLEY TURTLE

- > 5 pairs of costal scales
- 2 pairs pre-frontal scales
- 1 claw per fin
- Carapace: 50-75 cm
- Weight: 40-80 kg
- Status: Vulnerable

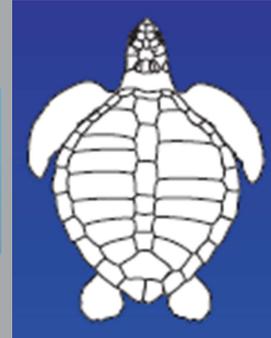
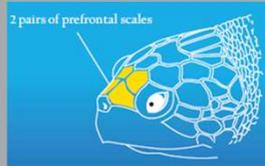


Photo: Dr. Colin Limpus



- Olive ridley turtles can occur in very large numbers in some areas
- Their carapace has very distinctive parallel lines, close to each other and between scales that make them easily identifiable at close range.
- Refer to the IOTC Marine Turtle Identification Cards for further detail



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## ANY QUESTIONS?



*send us a message via Talents LMS*



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